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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/585,472

07/06/2006

Noriaki Onodera

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EXAMINER

YEE, DEBORAH

ART UNIT

PAPER NUMBER

1793

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/585,472	<b>Applicant(s)</b> ONODERA ET AL.	
	<b>Examiner</b> Deborah Yee	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/29/08;7/06/06</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 2 is indefinite because step (b) recites accelerated cooling whereas step (b) in parent claim 1 recites cooling naturally without an accelerated cooling procedure.

### ***Claim Objections***

4. Claims 1, 2, 7 and 8 are objected to because they are awkwardly recited.
5. For claim 1, instead of "cooling the high temperature rail is cooled to ambient temperature, wherein the rail is maintained in an upright position until a temperature of a surface of a head of a rail", it is recommended to use language such as – cooling the high temperature rail to ambient temperature, wherein the rail is maintained in an upright position until surface temperature at the head of rail—
6. For claim 2, instead of “cooling of the head and a foot of the rail”, it is recommended to use language such as –cooling at the head and foot of rail---.
7. For claim 7, instead of “cooling the high temperature rail is cooled to ambient temperature, wherein the rail is maintained in an upright position until a surface temperature of a surface of a foot of a rail reaches a temperature”, it is recommended to use language such as – cooling the high temperature rail to ambient temperature,

Art Unit: 1793

wherein the rail is maintained in an upright position until surface temperature at the foot of rail reaches a temperature—

8. For claim 8, instead of “cooling of a head and the foot of the rail”, it is recommended to use language such as —cooling at the head and foot of rail---

9. Also to add clarity to independent claims 1 and 7, it is recommended to change step a) to recite ---hot rolling billet to form rail having a head and foot at high temperature---.

10. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1, 4, 5, 7, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese patent 590031824 (“JP-824”) or Japanese patent 60-251221 (JP-221), cited by Applicant in IDS filed July 6, 2006 or Japanese patent 363114923 (“JP-923”).

13. JP-824, JP-221 or JP-923, each discloses a rail manufacturing method to prevent bending during the cooling stage which anticipates claims 1 and 2. Note prior art method comprises hot rolling billet into the form of a rail having high temperature; and cooling the high temperature rail to ambient temperature, wherein the rail is maintained in an upright position, until surface temperature at the head of rail reaches a

Art Unit: 1793

temperature range of substantially 400 to 250°C and where the rail is cooled naturally without use of at least one of an insulation and an accelerated cooling procedure; and also maintained in an upright position, until an ambient temperature is reached.

14. JP-824, JP-221 or JP-923, each discloses a rail manufacturing method to prevent bending during the cooling stage which anticipates claims 7 and 10. Note prior art method comprises the steps of hot rolling a billet into the form of a rail having high temperature followed by cooling the high temperature rail to ambient temperature, wherein the rail is maintained in an upright position until surface temperature of the foot reaches a temperature range of 800 to 400°C and also until an ambient temperature is reached while the foot of the rail is mechanically restrained.

15. Figure 5 of JP-824 and figure 3 of JP221 measures temperature at cross-section of rail in upright position during cooling, which anticipates claims 5 and 11.

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 590031824 ("JP-824"), Japanese patent 60-251221 (JP-221) or Japanese patent 363114923 ("JP-923").

18. JP-824, JP-221 or JP-923, discussed supra, does not specify length of rail in the range of 80 to 250 meters as recited by claims 6 and 12. The length of rail, however,

Art Unit: 1793

would be a matter of choice well within the skill of the artisan to select and productive of no new and unexpected results.

19. Claims 2, 3, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 590031824 ("JP-824") or Japanese patent 60-251221(JP-221") or Japanese patent 363114923 ("JP-923") in view of Japanese patent 55002768 ("JP-768").

20. JP-824, JP-221 or JP-923, discussed supra, does not teach cooling the head and foot of rail after hot rolling in the austenitic temperature at a rate of 1°C/second to 20°C/sec, until surface temperature of head is 550 to 450°C or surface temperature of the foot is 500 to 450 °C as recited by claims 2, 3, 8 and 9. Nevertheless, it is well known and conventional practice in the metallurgical industry to manufacture steel rail by cooling in substantially the same manner as claimed by Applicant as evident JP-221. According to JP-221, steel rail can be produced by cooling hot rolled rail from the austenitic temperature range to 450-600°C (overlaps claimed temperature of 550-450°C) at a rate of 3-30°C/second (overlaps with claimed rate of 1 to 20°C/second). Hence Applicant's claimed cooling step is conventional and would be a matter of choice well within the skill of the artisan to incorporate to the primary prior art method in view of secondary teaching.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

Art Unit: 1793

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/  
Primary Examiner  
Art Unit 1793

/DY/